



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,090	06/26/2003	Wayne Lawrence Felts	STL11280	4245
7590	10/12/2007			
David K. Lucente Seagate Technology LLC Intellectual Property - COL2LGL 389 Disc Drive Longmont, CO 80503			EXAMINER TRUJILLO, JAMES K	
			ART UNIT 2116	PAPER NUMBER
			MAIL DATE 10/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/606,090	FELTS, WAYNE LAWRENCE
	Examiner	Art Unit
	James K. Trujillo	2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____ . | 6) <input type="checkbox"/> Other: ____ . |

Art Unit: 2116

DETAILED ACTION

1. In view of the appeal brief filed on 7/12/07, PROSECUTION IS HEREBY REOPENED.

New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:



REHANA PERVEEN
SUPERVISORY PATENT EXAMINER

10/10/07

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment dated
3. Claims 1-20 are presented for examination.

Art Unit: 2116

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 6, 7, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al., U.S. Patent Application Publication 20040019776 in view of Heydt et al., U.S. Patent Application Publication US 2002/016287.

6. Regarding claim 1, Sato teaches an apparatus comprising:

controlling an electrical load (disk 101 in figures 2 and 3) with first coded execute (boot program in paragraph [0079]) by a processor (processor 412 together disk controlling section 411, figure 3);

a first code is displaced with a second code (control is handed over to a main program, figures 1A, 1B and 5); and

processor control of the electrical load using the second code (control is handed over to a main program, figures 1A, 1B and 5).

Sato does not explicitly disclose ***releasing processor control so that the electrical load operates in an open control mode*** while the first code is displaced with a second code [emphasis added];

Sato also does not explicitly disclose ***reinstating*** control of the electrical load using the second code [emphasis added].

Heydt teaches releasing processing control so that an electrical load operates in an open control mode (handoff control to motor control circuitry in a closed loop control mode, figure 5, paragraphs [0014] and [0066]). Heydt provides the advantage of a reliable means to accelerate a disk to an operational velocity (paragraph [0016]).

It would have been obvious to one of ordinary skill in the art, having the teachings of Sato and Heydt before them at the time the invention was made to modify the system of Sato to use the closed loop spindle motor acceleration control of Heydt to achieve and maintain the rotation speeds of the disk in Sato. This modification would result in releasing processor control so that the electrical load would operate in an open control mode while the first code is displaced with the second control code and would result in reinstating control of the electrical load using the second code.

One of ordinary skill in the art would have been motivated to make this modification in order to reliably accelerate the disk of Sato in view of Heydt. Further, by handing off the acceleration of the disk to a motor driver controller, it would allow the processor would be able to process other information. Also, because both Sato and Heydt teach methods of accelerating a disk to operational speeds it would have been obvious to one of ordinary skill in the art to substitute the method of Heydt for the method used by Sato to achieve the predictable result of accelerating the disk to an operational speed.

7. Regarding claim 2, Sato together with Heydt taught the method according to claim 1, as described above. Sato further teaches wherein the first code of the controlling step is supplied from a boot read only memory (Mask ROM 413, figure 3 and paragraph [0079]).

8. Regarding claim 6, Sato together with Heydt taught the method according to claim 1, as described above. Sato further teaches wherein the electrical load comprises a motor (a hard disk that is spun, figures 2,3 and 6).

9. Regarding claim 7, Sato together with Heydt taught the method according to claim 1, as described above. Sato further teaches wherein the motor supports a data storage medium, and wherein the controlling step comprises using the motor to rotate the data storage medium at an operational velocity (common rotation speed and steady speed, figures 1A, 1B and 5) and retrieving the second code from the rotating data storage medium (read main program from disk, figures 1A, 1B and 5).

10. Regarding claim 19, Sato together with Heydt taught the method according to claim 1, as described above. Sato further teaches wherein the processor operationally controls the electrical load (processor together with the disk controlling section is used to control the disk based on the startup code and main program, figures 1A, 1B and 5).

11. Regarding claim 20, Sato together with Heydt taught the method according to claim 1, as described above. Sato further teaches wherein at least one control signal is applied to the electrical load during the open control mode of the releasing step (the disk controlling section 411 steadily drives the spindle motor 404 and processor 412 no longer repeats steps 301 or 302 , paragraphs [0085] and [0086]).

12. Claims 3-5 and 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al., U.S. Patent Application Publication 20040019776 in view of Heydt et al., U.S. Patent Application Publication US 2002/016287 and Broyles et al., U.S. Patent 6,405,311.

13. Regarding claim 14, Sato teaches an apparatus comprising:

an electrical load (disk 101 in figures 2 and 3);
a memory location (RAM 414, figure 3); and
a programmable processor (processor 412 together disk controlling section 411, figure 3) coupled to the memory location and adapted to control the electrical load (via motor driving section 401), wherein during and initialization process the processor executes startup code to initiate operational control of the load (processes before “Hand over control to main program”, figures 1A, 1B and figure 5; also described as a boot program in paragraph [0079]) application code is loaded to the memory location (where “Hand over control to main program” takes place is displacing the startup code, figures 1A and 1B and paragraphs [0054] and [0078]; wherein the application code is the main program), and operational control of the electrical using the application code (normal operation state, paragraphs [0027], [0029], [0054]).

Sato does not explicitly disclose *temporarily releasing operational control of the electric load so that the electrical load continues to operate in an open control mode while* application code is loaded to the memory location [emphasis added]; and *the programmable processor resumes* operational control [emphasis added]; and wherein the startup code is loaded into the memory location.

Heydt teaches an electric load (disk 108) and temporarily releasing operational control of the electric load such that the electric load to operates in an open control mode (handoff control to motor control circuitry in a closed loop control mode, figure 5, paragraphs [0014] and [0066]). Heydt provides the advantage of a reliable means to accelerate a disk to an operational velocity (paragraph [0016]).

It would have been obvious to one of ordinary skill in the art, having the teachings of Sato and Heydt before them at the time the invention was made to modify the system of Sato to use the closed loop spindle motor acceleration control of Heydt to achieve and maintain the rotation speeds of the disk in Sato. This modification or Sato would result in the processor of Sato temporarily releasing the operational control of the electric load so that the electric load would continue to operate in an open control mode while the application mode is loaded to the memory location and would resume operational control of the electric load using the application code.

One of ordinary skill in the art would have been motivated to make this modification in order to reliably accelerate the disk of Sato in view of Heydt. Further, by handing off the acceleration of the disk to a motor driver controller, it would allow the processor would be able to process other information. Also, because both Sato and Heydt teach methods of accelerating a disk to operational speeds it would have been obvious to one of ordinary skill in the art to substitute the method of Heydt for the method used by Sato to achieve the predictable result of accelerating the disk to an operational speed.

Broyles teaches wherein startup code is loaded in a memory location (wherein the startup codes is the “boot code” and the memory location is a “RAM” col. 6, lines 58-65). The memory location of Broyles is a RAM, which is similar to that of Sato. Also similar Sato, the startup code of Broyles is also in a ROM. Broyles further teaches that loading of the startup code from the ROM into the RAM provides the advantage of executing the startup code faster because the RAM allows faster execution than the ROM where the startup code is located.

It would have been obvious to one of ordinary skill in the art, having the teachings of Sato and Broyles before them at the time the invention was made, to modify Sato, by loading the startup code of Sato into the memory location.

One of ordinary skill in the art would have been motivated to make this modification in order to increase the speed of execution of the startup code in view of the teachings of Broyles.

14. Regarding claim 15, Sato together with Heydt and Broyles taught the apparatus according to claim 14, as described above. Sato further teaches further comprising a boot read only memory (ROM), which stores the startup code (Mask ROM 413, figure 3 and paragraph [0079]). Sato together with Broyles teaches wherein the startup code is loaded from the boot ROM to the memory execution for execution by the processor, as set forth hereinabove.

15. Regarding claim 16, Sato together with Heydt and Broyles taught the apparatus according to claim 14, as described above. Sato further teaches wherein the memory location of the using is characterized as a first memory, and wherein the apparatus further comprises a second memory location accessible by the processor and into which the processor loads the application code (wherein the second memory is the program loading section 417 in figures 3 and 6; the program loading section receives the application code (“main program”) from disk 101, paragraph [0008]).

16. Regarding claim 17, Sato together with Heydt and Broyles taught the apparatus according to claim 14, as described above. Sato further teaches wherein the electrical load comprises a motor supporting a data storage medium (hard disk 101, figures 2 and 3), and wherein the execution of the startup code by the processor results in the energizing of the motor to rotate the

data storage medium at an operational velocity (increasing the rotation speed to common rotation speed, figures 1A and 1B; steady speed figure 5).

17. Regarding claim 18, Sato together with Heydt and Broyles taught the apparatus according to claim 14, as described above. Sato further teaches comprising an actuator motor coupled to a data transducing head, and wherein the execution of the startup code by the processor further results in the energizing of the actuator motor to bring the head into alignment with a track defined on the data storage medium, the head transducing the application form said track (moving magnetic head to system area, paragraphs [0085] through [0087]).

18. Regarding claims 3-5, 8-13, Sato together with Heydt and Broyles taught the claimed apparatus, therefore together they teach the claimed method.

Response to Arguments

19. Applicant's arguments with respect to claim 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James K. Trujillo whose telephone number is (571) 272-3677. The examiner can normally be reached on M-F (8:00 am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



James K. Trujillo
Primary Examiner, AU 2116
Technology Center 2100

